ELSEVIER

Volume 139, Issues 1–3, 20 August 2003

Journal of
Materials
Processing
Technology

www.elsevier.com/locate/jmatprotec

Contents

Formability of AA5182/polypropylene/AA5182 sandwich sheets 1
K.J. Kim, D. Kim, S.H. Choi, K. Chung, K.S. Shin, F. Barlat, K.H. Oh, J.R. Youn

Post-processing methodologies for off-line robot programming within computer integrated manufacture 8
S.F. Chan, R. Kwan

A multi-sensor approach to the monitoring of end milling operations 15
K.T. Chung, A. Geddam

Error compensation in the end milling of pockets: a methodology 21
K.M.Y. Law, A. Geddam

Simulation based analysis of complex production systems with methods of non-linear dynamics 28
H.-P. Wiendahl, J. Worbs

Potential manufacturing productivity changes arising from the application of Internet-based technologies 35
W.C. Kwong, D. Toncich, S.F. Lee

Research on manufacturing resource modeling based on the O–O method 40
L. Chengying, W. Xiankui, H. Yuchen

8C plus 6C management model for multi-national corporation: a locally compatible and globally fit culture model 44
W.-H. Ng, S.F. Lee, E. Siores

Collaborative product definition on the Internet: a case study 51
G.Q. Huang, S.W. Lee, K.L. Mak

Deformation behavior of tubes with thickness deviation in circumferential direction during hydraulic free bulging 58
A. Shirayori, S. Fuchizawa, H. Ishigure, M. Narazaki

Finite element simulation of the shearing mechanism in the blanking of sheet metal 64
N. Hatanaka, K. Yamaguchi, N. Takakura

Spatter prevention during the laser drilling of selected aerospace materials 71
D.K.Y. Low, L. Li, P.J. Byrd

Study of an intelligent micro-manipulator 77
D. Liu, Y. Xu, R. Fei

A Windows-native 3D plastic injection mold design system 81
L. Kong, J.Y.H. Fuh, K.S. Lee, X.L. Liu, L.S. Ling, Y.F. Zhang, A.Y.C. Nee

Evaluation of circularity and sphericity from coordinate measurement data 90
G.L. Samuel, M.S. Shunmugam

Surface mapping of three-dimensional objects by a planar light scanning technique 96
C.M. Wong, W.H. Chan, T.W. Lam, K.Y. Yip

An intelligent and adaptive modelling and configuration approach to manufacturing systems control 103
W.T. Goh, Z. Zhang

The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. A leaflet describing our requirements is available from the publisher upon request.

CONTENTS Direct

This journal is part of **ContentsDirect**, the ***free*** alerting service which sends tables of contents by e-mail for Elsevier books and journals. You can register for **ContentsDirect** online at: **http://contentsdirect.elsevier.com**

Elsevier B.V.

A generic algorithm for a best part orientation system for complex parts in rapid prototyping 110
S.H. Masood, W. Rattanawong, P. Iovenitti

A one-cycle training technique for copper-based shape memory alloys 117
J. Fernandez, X.M. Zhang, J.M. Guilemany

Systematic innovation and the underlying principles behind TRIZ and TOC 120
R. Stratton, D. Mann

Error measurement of five-axis CNC machines with 3D probe–ball 127
W.T. Lei, Y.Y. Hsu

An intelligent hierarchical workstation control model for FMS. 134
K.W. Keung, W.H. Ip, D. Yuen

Processing of natural-fibre reinforced polymers and the resulting dynamic–mechanical properties 140
B. Wielage, Th. Lampke, H. Utschick, F. Soergel

Electronic commerce: supporting collaboration in the supply chain? 147
R. McIvor, P. Humphreys, L. McCurry

Tools optimisation in cross wedge rolling 153
Z. Pater

Tooling requirements for glass container production for the narrow neck press and blow process 160
M. Sarwar, A.W. Armitage

Conical pipe envelope formation process 164
F. Knap, R. Kruzel, M. Krakowiak

Transient melting models for the three stages of reciprocating extrusion 170
K.L. Yung, Y. Xu, K.H. Lau

Advances in e-manufacturing: foundations of market-based collaborative planning and control of distributed multiple product development projects. 178
Y.-H. Lee, S.R.T. Kumara

Rigid–plastic finite element analysis of hydroforming process and its applications 187
L.-P. Lei, J. Kim, S.-J. Kang, B.-S. Kang

A simple volume loss recovery scheme in non-steady state metal forming analysis by the rigid–plastic FEM 195
S. Toyoshima, M. Gotoh, S. Jian

Stretch-drawing of titanium sheets 201
J. Satoh, M. Gotoh, Y. Maeda

An experimental study of shear damage and failure of aluminium alloy 2024T3 208
C.Y. Tang, T.C. Lee, B. Rao

Computerised price quoting system for injection mould manufacture 212
S.F. Chan, C.K. Law, K.K. Chan

Rapid prototyping for self-similarity design 219
S.C. Soo, K.M. Yu

A study of ultrasonically aided micro-electrical-discharge machining by the application of workpiece vibration. 226
C. Gao, Z. Liu

A Web-based CAD system. 229
J. Zeng, W. Chen, Q. Ding

A semantic style driving method for products' appearance design. 233
H. Cai, W. He, D. Zhang

On-line tool breakage monitoring in turning. 237
W. Haili, S. Hua, C. Ming, H. Dejin

Security technology of smart cards applied in an information system 243
S. Bing, L. Liang, F. Xunli

A new algorithm for evaluating form error: the valid characteristic point method with the rapidly contracted constraint zone . . . 247
G. Deng, G. Wang, J. Duan

Surface quality analysis of the electropolishing of cemented carbide. 253
Y.N. Hu, H. Zhou, L.P. Liao, H.B. Deng

Research and development on constraint-based product family design and assembly simulation 257
Z.H. Jiang, J.Q. Yan

Study of the ground workpiece surface topography in high-speed precision grinding using a scanning tunneling microscopy . . . 263
L. Shangping, L. Jie, L. Li, C. Shousheng, S. Wengui, P. Huiqin

A holonic architecture of the concurrent integrated process planning system . . . 267
J. Zhang, L. Gao, F.T.S. Chan, P. Li

A study on the laser marking process of stainless steel . . . 273
J. Qi, K.L. Wang, Y.M. Zhu

Study on the fuzzy ranking of granite sawability . . . 277
X. Wei, C.Y. Wang, Z.H. Zhou

Force ratio in the circular sawing of granites with a diamond segmented blade . . . 281
X. Xu, Y. Li, Y. Yu

An USB-based software CNC system . . . 286
C. Zhang, H. Wang, J. Wang

Variable frequency microwave (VFM) processing facilities and application in processing thermoplastic matrix composites . . . 291
H.S. Ku, F. Siu, E. Siores, J.A.R. Ball

Microstructure of laser melted Zn–Al-based alloy . . . 296
Y.H. Zhu, H.C. Man, W.B. Lee

Petri Net-based workflow management systems for in-process control in a plastic processing plant . . . 302
R.Y.K. Fung, A.Y.M. Au, A.W.H. Ip

A best-fitting algorithm for optimal location of large-scale blanks with free-form surfaces . . . 310
B. Shen, G.Q. Huang, K.L. Mak, X.C. Wang

Study of the surface integrity of the machined workpiece in the EDM of tungsten carbide . . . 315
S.H. Lee, X. Li

Cost effective reprocessing of polyurethane by hot compression moulding . . . 322
A.J. Hulme, T.C. Goodhead

A process for incorporating automotive shredder residue into thermoplastic mouldings . . . 327
S. Robson, T.C. Goodhead

Finite element method analysis and control stratagem for machining deformation of thin-walled components . . . 332
H. Ning, W. Zhigang, J. Chengyu, Z. Bing

Superplasticity and cavity stringers in a multiphase NiAl-based intermetallic alloy . . . 337
J.T. Guo, R.S. Chen, G.S. Li

Springback of sheet metal laminates in draw-bending . . . 341
R. Hino, Y. Goto, F. Yoshida

A study into the use of the process failure mode and effects analysis (PFMEA) in the automotive industry in the UK . . . 348
K.G. Johnson, M.K. Khan

Development and implementation of visual feedback technology in automotive windscreen manufacture . . . 357
P. Groombridge, A. Oloyede, P. Doherty-Bigara

Fabrication of Ti/cluster diamond/TiC in situ composites . . . 362
K. Hanada, N. Nakayama, M. Mayuzumi, T. Sano

Data fusion of distributed AE sensors for the detection of friction sources during press forming . . . 368
M. Yang, K. Manabe, K. Hayashi, M. Miyazaki, N. Aikawa

Automatic colour printing inspection by image processing . . . 373
J. Luo, Z. Zhang

A multi-agent based manufacturing control strategy for responsive manufacturing . . . 379
M.K. Lim, Z. Zhang

Strategic capacity management: meeting technological demands and performance criteria . . . 385
R. Dekkers

Development of a generic computer-aided process planning support system . . . 394
C.F. Yuen, S.Y. Wong, P.K. Venuvinod

A virtual design platform for interactive product design and visualization . . . 402
H.Y.K. Lau, K.L. Mak, M.T.H. Lu

A novel technique of friction aided deep drawing using a blank-holder divided into four segments . . . 408
M.A. Hassan, N. Takakura, K. Yamaguchi

Scratch characteristics for non-vinyl pre-coated metal sheet using the simple U-bending process . . . 414
D.H. Kim, B.M. Kim, Y. Lee

New processes to prevent a flow defect in the combined forward–backward cold extrusion of a piston-pin 422
D.J. Lee, D.J. Kim, B.M. Kim

Determination of welding pressure in the non-steady-state porthole die extrusion of improved Al7003 hollow section tubes 428
H.H. Jo, C.S. Jeong, S.K. Lee, B.M. Kim

Preparation of metastable precursors with different compositions of Ti–Al–Si by mechanical alloying 434
J.B. Zhou, K.P. Rao, C.Y. Chung

Application of Smart Card security technology in manufacturing 440
J. Yuan, B. Tao, J. Shi

A new model describing physical effects in crystals: the diagrammatic and analytic methods for macro-phenomenological theory 444
S. Baoyuan, W. Jiantong, Z. Jun, Q. Min

Microstructural characteristics of laser clad coatings with rare earth metal elements 448
K.L. Wang, Q.B. Zhang, M.L. Sun, X.G. Wei

Global manufacture by using conceptual design 453
M.Ch. Xiong

Numerical methods to improve the computational efficiency of thermal analysis for the die casting process 457
S.M. Xiong, F. Lau, W.B. Lee, L.R. Jia

Technological study of liquid die forging for the aluminum alloy connecting rod of an air compressor 462
F. Yin, G.X. Wang, S.Z. Hong, Z.P. Zeng

Application of an integrated CAD/CAE/CAM system for die casting dies 465
S. Yue, G. Wang, F. Yin, Y. Wang, J. Yang

Technological study of the hydraulic extrusion–bulge forming of a three-way tube 469
S.-Z. Hong, Z.-P. Zeng

Research into the engineering application of reverse engineering technology 472
Y. Zhang

Study on intelligent reasoning of product assembly sequences and simulation 476
L.C. Zhao, D.Q. Zhu, B. Zhao

Current practice of engineering change management in Hong Kong manufacturing industries 481
G.Q. Huang, W.Y. Yee, K.L. Mak

Towards integration of hybrid models for optimized machining performance in intelligent manufacturing systems 488
I.S. Jawahir, A.K. Balaji, K.E. Rouch, J.R. Baker

A reference architecture for the design of an industrial temperature feedback welding control system. 499
H. Holm, H.C.E. Kjeldsen, J.K. Kristensen

An organizational culture and the empowerment for change in SMEs in the Hong Kong manufacturing industry 505
K.F. Chu

Simulation of necking using a damage coupled finite element method 510
C.Y. Tang, J.P. Fan, T.C. Lee

A coupled thermo-viscoplastic formulation at finite strains for the numerical simulation of superplastic forming 514
L. Adam, J.-P. Ponthot

Parameter identification and shape/process optimization in metal forming simulation 521
J.-P. Kleinermann, J.-P. Ponthot

Re-engineering the roto-casting mould making process 527
S.F. Chan, C.K. Law, T.T. Wong

Analysis and implementation of the BOM of a tree-type structure in MRPII 535
J. Guoli, G. Daxin, F. Tsui

Research on forming theory of a 3D body by the constructing cutting geometry method (CCG) 539
W. Zhongqing

Flow stress of carbon steel 08F in temperature range of warm-forging 543
L. Xinbo, X. Hongsheng, Z. Zhiliang

A UBET analysis of the non-axisymmetric combined extrusion process. 547
B.C. Hwang, H.I. Lee, W.B. Bae

Computer simulation of sheet metal forming based on damage mechanics approach 553
C.L. Chow, W.H. Tai, E. Chu

An ALE approach for finite element ring-rolling simulation of profiled rings 559
K. Davey, M.J. Ward

Numerical modelling of the rotary furnace in aluminium recycling processes. 567
A.R. Khoei, I. Masters, D.T. Gethin

Analysis of the explosive cladding of cu–low carbon steel plates 573
K. Raghukandan

Dynamic modelling of magnetic materials for high frequency applications 578
K.W.E. Cheng, W.S. Lee, C.Y. Tang, L.C. Chan

Surface hardening of steel using a high power diode laser 585
I.R. Pashby, S. Barnes, B.G. Bryden

An approach for interlinking design and process planning 589
M. Kang, J. Han, J.G. Moon

Hong Kong productivity council—the I-hub of productivity in Hong Kong 596
T.K.Y. Tang

e-Enterprise and management course development using strategy formulation framework for vocational education. 604
S.F. Lee, K.K. Lo

Feature-based collaborative design 613
W. Huifen, Z. Youliang, C. Jian, S.-F. Lee, W.-C. Kwong

Research on group decision support system for concurrent product development process. 619
H. Zhao, Y. Zhang, Z. Wang, S.-f. Lee, W.-c. Kwong

Re-usable component design for supporting 3D modeling and simulation 624
S. Chunlon, Z. Youliang, K. Jianshou, L. Sik-Fun, K. Wing-Cheong

Effect of machining parameters and heat treatment on the residual stress distribution in titanium alloy IMI-834 628
B.R. Sridhar, G. Devananda, K. Ramachandra, R. Bhat

Numerical study on the effect of electrode force in small-scale resistance spot welding 635
B.H. Chang, Y. Zhou

Thermomechanical processing and characterisation of multi-phase microstructures in a V-bearing medium carbon micro-alloyed steel 642
S. Sankaran, V. Subramanya Sarma, V. Kaushik, K.A. Padmanabhan

Author Index 648
Subject Index 650